WHAT IS CLAIMED IS:

Sub A7

1. A method for implicitly resolving pointing ambiguities in human-computer interaction, comprising the steps of:

(a) intending by a user to select a user targeted object from a plurality of at least two objects in an object domain displayed by a computer executing a computer application including a pointing mechanism featuring a pointer dynamically moveable throughout said object domain;

(b) moving by said user said pointer towards said user targeted object;

(c) estimating by said computer user movement continuation of said pointer towards said user targeted object;

(d) forming by said computer a set of candidate predicted user targeted objects according to parameters selected from the group consisting of pointer movement continuation parameters obtained from step (c) and pointer position parameters;

(e) predicting by said computer said user targeted object from said set of said candidate predicted user targeted objects according to at least one category of heuristic measures selected from the group consisting of implicit user pointing gesture measures, application context measures, and, number of computer suggestions of each predicted user targeted object measures, for generating by said computer a best predicted user targeted object;

(f) suggesting by said computer said best predicted user targeted object to said user; and

(g) making a decision by said user, said decision is selected from the group consisting of accepting said computer suggested best predicted user targeted object as said user targeted object and as correct, and, rejecting said computer suggested best predicted user targeted object as not said user targeted object and as incorrect, whereby if said decision is said accepting said computer suggested best predicted user targeted object as said user targeted object, then said user performs an acceptance action using said pointing mechanism, indicative that the pointing ambiguities are resolved.

2. The method of claim 1, wherein said category of implicit user pointing gesture measures includes particular types of said heuristic measures selected from the group consisting of speed-accuracy tradeoff heuristic measures and exact pointer position heuristic measures.

3. The method of claim 1, wherein said category of implicit user pointing gesture measures includes particular types of said heuristic measures selected from the group consisting of total movement time (TMT) heuristic measures and amount of fine tuning (AFT) or tail length (TL) heuristic measures.

4. The method of claim 1, wherein said category of implicit user pointing gesture measures includes total movement time (TMT) heuristic measures based on applying Fitts' Law for determining a total movement time parameter, TMT, for performing a given task as a function of a size, W, of said user targeted object and a distance, A, of said user targeted object from a pre-determined reference point, where said Fitts' Law is described by a formula, said $TMT = a + b * \log_2 [(2 * A) / W]$, where said a and said b are empirically determined Fitts'

Law parameters, said asterisk symbol, *, is a multiplication operator, and said factor $\log_2 [(2 * A) / W]$ is an index of difficulty describing difficulty for said performing said given task in 'bit' units.

5. The method of claim 1, wherein said category of implicit user pointing gesture measures includes total movement time (TMT) heuristic measures based on applying a reversed version of Fitts' Law for predicting a size, *W*, of said user targeted object from a total movement time parameter, TMT, for performing a given task and from a distance, *A*, of said user targeted object from a pre-determined reference point, where said Fitts' Law is described by a formula, said $TMT = a + b * \log_2 [(2 * A) / W]$, where said *a* and said *b* are empirically determined Fitts' Law parameters, said asterisk symbol, *, is a multiplication operator, and said factor $\log_2 [(2 * A) / W]$ is an index of difficulty describing difficulty for said performing said given task in 'bit' units.

6. The method of claim 1, wherein said category of implicit user pointing gesture measures includes total movement time (TMT) heuristic measures based on applying a Shannon formulation of Fitts' Law for determining said total movement time, TMT, for performing a given task as a function of a size, *W*, of said user targeted object and a distance, *A*, of said user targeted object from a pre-determined reference point, where said Shannon formulation of said Fitts' Law is described by a formula, said $TMT = a + b * \log_2 [(A / W) + 1]$, where said *a* and said *b* are empirically determined Fitts' Law parameters, said asterisk symbol, *, is a multiplication operator, and said factor $\log_2 [(A / W)]$ is an index of difficulty describing difficulty for said performing said given task in 'bit' units.

7. The method of claim 1, wherein said category of implicit user pointing gesture measures includes total movement time (TMT) heuristic measures based on applying a reversed Shannon formulation of Fitts' Law for predicting a size, *W*, of said user targeted object from a total movement time parameter, TMT, for performing a given task and from a distance, *A*, of said user targeted object from a pre-determined reference point, where said Shannon formulation of said Fitts' Law is described by a formula, said TMT = $a + b * \log_2 [(2 * A) / W]$, where said *a* and said *b* are empirically determined Fitts' Law parameters, said asterisk symbol, *, is a multiplication operator, and said factor $\log_2 [(2 * A) / W]$ is an index of difficulty describing difficulty for said performing said given task in 'bit' units.

8. The method of claim 7, whereby extent by which said prediction of said size, *W*, of said user targeted object fits said reversed Shannon formulation of said Fitts' Law is defined as a fit written in a form, said fit = $ABS (TMT - a - b * \log_2 [(A / W) + 1])$.

9. The method of claim 1, wherein said category of implicit user pointing gesture measures includes amount of fine tuning (AFT) or tail length (TL) heuristic measures for determining a tail length parameter, TL, of said user movement of said pointer as a function of a size, *W*, of said user targeted object and a distance, *A*, of said user targeted object from a pre-determined reference point, where said tail length parameter is described by a formula, said TL = $a * W^2 + b * W + c$, where said *a*, said *b*, and said *c*, are empirically determined (AFT) or (TL) parameters and said asterisk symbol, *, is a multiplication operator.

10. The method of claim 1, whereby said category of implicit user pointing gesture measures includes particular types of exact pointer position heuristic measures selected from the group consisting of distance of said pointer from center of said user targeted object and direction of said moving by said user said pointer towards said user targeted object.

11. The method of claim 1, whereby said category of application context measures is based on context, of said selecting said user targeted object by said user, including any information external to said selecting and relevant to understanding said selecting said user targeted object.

12. The method of claim 1, whereby said category of application context measures includes a containment hierarchy particular type of said heuristic measures.

13. A method for implicitly resolving pointing ambiguities in human-computer interaction, comprising the steps of:

(a) intending by a user to select a user targeted object from a plurality of at least two objects in an object domain displayed by a computer executing a computer application including a pointing mechanism featuring a pointer dynamically moveable throughout said object domain;

(b) moving by said user said pointer towards said user targeted object;

(c) selecting by said user a position of said pointer located in a vicinity of said user targeted object;

(d) estimating by said computer user movement continuation of said pointer towards said user targeted object;

(e) forming by said computer a set of candidate predicted user targeted objects according to parameters selected from the group consisting of pointer movement continuation parameters obtained from step (d) and pointer position parameters;

(f) predicting by said computer said user targeted object from said set of said candidate predicted user targeted objects according to at least one category of heuristic measures selected from the group consisting of implicit user pointing gesture measures and application context measures, for generating by said computer a best predicted user targeted object; and

(g) selecting by said computer said computer generated best predicted user targeted object, whereby if said computer generated best predicted user targeted object is said user targeted object, then the pointing ambiguities are resolved.

14. The method of claim 13, wherein said category of implicit user pointing gesture measures includes particular types of said heuristic measures selected from the group consisting of speed-accuracy tradeoff heuristic measures and exact pointer position heuristic measures.

15. The method of claim 13, wherein said category of implicit user pointing gesture measures includes particular types of said heuristic measures selected from the group consisting of total movement time (TMT) heuristic measures and amount of fine tuning (AFT) or tail length (TL) heuristic measures.

16. The method of claim 13, wherein said category of implicit user pointing gesture measures includes total movement time (TMT) heuristic measures based on applying Fitts' Law for determining a total movement time parameter, TMT, for performing a given task as a function of a size, *W*, of said user targeted object and a distance, *A*, of said user targeted object from a pre-determined reference point, where said Fitts' Law is described by a formula, said TMT = $a + b * \log_2 [(2 * A) / W]$, where said *a* and said *b* are empirically determined Fitts' Law parameters, said asterisk symbol, *, is a multiplication operator, and said factor $\log_2 [(2 * A) / W]$ is an index of difficulty describing difficulty for said performing said given task in 'bit' units.

17. The method of claim 13, wherein said category of implicit user pointing gesture measures includes total movement time (TMT) heuristic measures based on applying a reversed version of Fitts' Law for predicting a size, *W*, of said user targeted object from a total movement time parameter, TMT, for performing a given task and from a distance, *A*, of said user targeted object from a pre-determined reference point, where said Fitts' Law is described by a formula, said TMT = $a + b * \log_2 [(2 * A) / W]$, where said *a* and said *b* are empirically determined Fitts' Law parameters, said asterisk symbol, *, is a multiplication operator, and said factor $\log_2 [(2 * A) / W]$ is an index of difficulty describing difficulty for said performing said given task in 'bit' units.

18. The method of claim 13, wherein said category of implicit user pointing gesture measures includes total movement time (TMT) heuristic measures based on applying a Shannon formulation of Fitts' Law for determining said total movement time, TMT, for performing a given task as a function of a size, *W*, of said user targeted object and a distance,

A, of said user targeted object from a pre-determined reference point, where said Shannon formulation of said Fitts' Law is described by a formula, said TMT = $a + b * \log_2 [(A / W) + 1]$, where said a and said b are empirically determined Fitts' Law parameters, said asterisk symbol, *, is a multiplication operator, and said factor $\log_2 [(A / W)]$ is an index of difficulty describing difficulty for said performing said given task in 'bit' units.

19. The method of claim 13, wherein said category of implicit user pointing gesture measures includes total movement time (TMT) heuristic measures based on applying a reversed Shannon formulation of Fitts' Law for predicting a size, W, of said user targeted object from a total movement time parameter, TMT, for performing a given task and from a distance, A, of said user targeted object from a pre-determined reference point, where said Shannon formulation of said Fitts' Law is described by a formula, said TMT = $a + b * \log_2 [(2 * A) / W]$, where said a and said b are empirically determined Fitts' Law parameters, said asterisk symbol, *, is a multiplication operator, and said factor $\log_2 [(2 * A) / W]$ is an index of difficulty describing difficulty for said performing said given task in 'bit' units.

20. The method of claim 19, whereby extent by which said prediction of said size, W, of said user targeted object fits said reversed Shannon formulation of said Fitts' Law is defined as a fit written in a form, said fit = ABS (TMT - a - b * $\log_2 [(A / W) + 1]$).

21. The method of claim 13, wherein said category of implicit user pointing gesture measures includes amount of fine tuning (AFT) or tail length (TL) heuristic measures for determining a tail length parameter, TL, of said user movement of said pointer as a function of a size, W, of said user targeted object and a distance, A, of said user targeted object

from a pre-determined reference point, where said tail length parameter is described by a formula, said

TL = $a * W^2 + b * W + c$, where said a, said b, and said c, are empirically determined (AFT) or (TL) parameters and said asterisk symbol, *, is a multiplication operator.

22. The method of claim 13, whereby said category of implicit user pointing gesture measures includes particular types of exact pointer position heuristic measures selected from the group consisting of distance of said pointer from center of said user targeted object and direction of said moving by said user said pointer towards said user targeted object.

23. The method of claim 13, whereby said category of application context measures is based on context, of said selecting said user targeted object by said user, including any information external to said selecting and relevant to understanding said selecting said user targeted object.

24. The method of claim 13, whereby said category of application context measures includes a containment hierarchy particular type of said heuristic measures.

25. A method for implicitly resolving pointing ambiguities in human-computer interaction, comprising the steps of:

(a) intending by a user to select a user targeted object from a plurality of at least two objects in an object domain displayed by a computer executing a computer application including a pointing mechanism featuring a pointer dynamically moveable throughout said object domain;

(b) moving by said user said pointer towards said user targeted object;

(c) implicitly resolving by said computer the pointing ambiguities by implicitly analyzing user movements of said pointer towards said user targeted object located in said object domain and predicting said user targeted object, whereby said implicitly analyzing and predicting are performed by using at least one category of heuristic measures selected from the group consisting of implicit user pointing gesture measures, application context measures, and number of computer suggestions of each best predicted user targeted object measures.

26. The method of claim 25, wherein said category of implicit user pointing gesture measures includes particular types of said heuristic measures selected from the group consisting of speed-accuracy tradeoff heuristic measures and exact pointer position heuristic measures.

27. The method of claim 25, wherein said category of implicit user pointing gesture measures includes particular types of said heuristic measures selected from the group consisting of total movement time (TMT) heuristic measures and amount of fine tuning (AFT) or tail length (TL) heuristic measures.

28. The method of claim 25, wherein said category of implicit user pointing gesture measures includes total movement time (TMT) heuristic measures based on applying Fitts' Law for determining a total movement time parameter, TMT, for performing a given task as a function of a size, W, of said user targeted object and a distance, A, of said user targeted object from a pre-determined reference point, where said Fitts' Law is described by a formula, said TMT = $a + b * \log_2 [(2 * A) / W]$, where said a and said b are empirically

determined Fitts' Law parameters, said asterisk symbol, *, is a multiplication operator, and said factor $\log_2 [(2 * A) / W]$ is an index of difficulty describing difficulty for said performing said given task in 'bit' units.

29. The method of claim 25, wherein said category of implicit user pointing gesture measures includes total movement time (TMT) heuristic measures based on applying a reversed version of Fitts' Law for predicting a size, *W*, of said user targeted object from a total movement time parameter, TMT, for performing a given task and from a distance, *A*, of said user targeted object from a pre-determined reference point, where said Fitts' Law is described by a formula, said $TMT = a + b * \log_2 [(2 * A) / W]$, where said *a* and said *b* are empirically determined Fitts' Law parameters, said asterisk symbol, *, is a multiplication operator, and said factor $\log_2 [(2 * A) / W]$ is an index of difficulty describing difficulty for said performing said given task in 'bit' units.

30. The method of claim 25, wherein said category of implicit user pointing gesture measures includes total movement time (TMT) heuristic measures based on applying a Shannon formulation of Fitts' Law for determining said total movement time, TMT, for performing a given task as a function of a size, *W*, of said user targeted object and a distance, *A*, of said user targeted object from a pre-determined reference point, where said Shannon formulation of said Fitts' Law is described by a formula, said $TMT = a + b * \log_2 [(A / W) + 1]$, where said *a* and said *b* are empirically determined Fitts' Law parameters, said asterisk symbol, *, is a multiplication operator, and said factor $\log_2 [(A / W)]$ is an index of difficulty describing difficulty for said performing said given task in 'bit' units.

31. The method of claim 25, wherein said category of implicit user pointing gesture measures includes total movement time (TMT) heuristic measures based on applying a reversed Shannon formulation of Fitts' Law for predicting a size, *W*, of said user targeted object from a total movement time parameter, TMT, for performing a given task and from a distance, *A*, of said user targeted object from a pre-determined reference point, where said Shannon formulation of said Fitts' Law is described by a formula, said TMT = $a + b * \log_2 [(2 * A) / W]$, where said *a* and said *b* are empirically determined Fitts' Law parameters, said asterisk symbol, *, is a multiplication operator, and said factor $\log_2 [(2 * A) / W]$ is an index of difficulty describing difficulty for said performing said given task in 'bit' units.

32. The method of claim 31, whereby extent by which said prediction of said size, *W*, of said user targeted object fits said reversed Shannon formulation of said Fitts' Law is defined as a fit written in a form, said fit = ABS (TMT - $a - b * \log_2 [(A / W) + 1]$).

33. The method of claim 25, wherein said category of implicit user pointing gesture measures includes amount of fine tuning (AFT) or tail length (TL) heuristic measures for determining a tail length parameter, TL, of said user movement of said pointer as a function of a size, *W*, of said user targeted object and a distance, *A*, of said user targeted object from a pre-determined reference point, where said tail length parameter is described by a formula, said

TL = $a * W^2 + b * W + c$, where said *a*, said *b*, and said *c*, are empirically determined (AFT) or (TL) parameters and said asterisk symbol, *, is a multiplication operator.

34. The method of claim 25, whereby said category of implicit user pointing gesture measures includes particular types of exact pointer position heuristic measures selected from the group consisting of distance of said pointer from center of said user targeted object and direction of said moving by said user said pointer towards said user targeted object.

35. The method of claim 25, whereby said category of application context measures is based on context, of said selecting said user targeted object by said user, including any information external to said selecting and relevant to understanding said selecting said user targeted object.

36. The method of claim 25, whereby said category of application context measures includes a containment hierarchy particular type of said heuristic measures.

37. A method for implicitly resolving pointing ambiguities in human-computer interaction, comprising the steps of:

(a) intending by a user to select a user targeted object from a plurality of at least two objects in an object domain displayed by a computer executing a computer application including a pointing mechanism featuring a pointer dynamically moveable throughout said object domain;

(b) moving by said user said pointer towards said user targeted object;

(c) implicitly resolving by said computer the pointing ambiguities by implicitly analyzing user movements of said pointer towards said user targeted object located in said object domain and predicting said user targeted object, whereby said implicitly analyzing and predicting are performed by using at least one

category of heuristic measures selected from the group consisting of implicit user pointing gesture measures and application context measures.

38. The method of claim 37, wherein said category of implicit user pointing gesture measures includes particular types of said heuristic measures selected from the group consisting of speed-accuracy tradeoff heuristic measures and exact pointer position heuristic measures.

39. The method of claim 37, wherein said category of implicit user pointing gesture measures includes particular types of said heuristic measures selected from the group consisting of total movement time (TMT) heuristic measures and amount of fine tuning (AFT) or tail length (TL) heuristic measures.

40. The method of claim 37, wherein said category of implicit user pointing gesture measures includes total movement time (TMT) heuristic measures based on applying Fitts' Law for determining a total movement time parameter, TMT, for performing a given task as a function of a size, W, of said user targeted object and a distance, A, of said user targeted object from a pre-determined reference point, where said Fitts' Law is described by a formula, said $TMT = a + b * \log_2 [(2 * A) / W]$, where said a and said b are empirically determined Fitts' Law parameters, said asterisk symbol, *, is a multiplication operator, and said factor $\log_2 [(2 * A) / W]$ is an index of difficulty describing difficulty for said performing said given task in 'bit' units.

41. The method of claim 37, wherein said category of implicit user pointing gesture measures includes total movement time (TMT) heuristic measures based on applying a reversed version of Fitts' Law for predicting a size, *W*, of said user targeted object from a total movement time parameter, TMT, for performing a given task and from a distance, *A*, of said user targeted object from a pre-determined reference point, where said Fitts' Law is described by a formula, said TMT = $a + b * \log_2 [(2 * A) / W]$, where said *a* and said *b* are empirically determined Fitts' Law parameters, said asterisk symbol, *, is a multiplication operator, and said factor $\log_2 [(2 * A) / W]$ is an index of difficulty describing difficulty for said performing said given task in 'bit' units.

42. The method of claim 37, wherein said category of implicit user pointing gesture measures includes total movement time (TMT) heuristic measures based on applying a Shannon formulation of Fitts' Law for determining said total movement time, TMT, for performing a given task as a function of a size, *W*, of said user targeted object and a distance, *A*, of said user targeted object from a pre-determined reference point, where said Shannon formulation of said Fitts' Law is described by a formula, said TMT = $a + b * \log_2 [(A / W) + 1]$, where said *a* and said *b* are empirically determined Fitts' Law parameters, said asterisk symbol, *, is a multiplication operator, and said factor $\log_2 [(A / W)]$ is an index of difficulty describing difficulty for said performing said given task in 'bit' units.

43. The method of claim 37, wherein said category of implicit user pointing gesture measures includes total movement time (TMT) heuristic measures based on applying a reversed Shannon formulation of Fitts' Law for predicting a size, *W*, of said user targeted object from a total movement time parameter, TMT, for performing a given task and from a

distance, A, of said user targeted object from a pre-determined reference point, where said Shannon formulation of said Fitts' Law is described by a formula, said TMT = $a + b * \log_2 [(2 * A) / W]$, where said a and said b are empirically determined Fitts' Law parameters, said asterisk symbol, *, is a multiplication operator, and said factor $\log_2 [(2 * A) / W]$ is an index of difficulty describing difficulty for said performing said given task in 'bit' units.

44. The method of claim 43, whereby extent by which said prediction of said size, W, of said user targeted object fits said reversed Shannon formulation of said Fitts' Law is defined as a fit written in a form, said fit = ABS (TMT - a - $b * \log_2 [(A / W) + 1]$).

45. The method of claim 37, wherein said category of implicit user pointing gesture measures includes amount of fine tuning (AFT) or tail length (TL) heuristic measures for determining a tail length parameter, TL, of said user movement of said pointer as a function of a size, W, of said user targeted object and a distance, A, of said user targeted object from a pre-determined reference point, where said tail length parameter is described by a formula, said

TL = $a * W^2 + b * W + c$, where said a, said b, and said c, are empirically determined (AFT) or (TL) parameters and said asterisk symbol, *, is a multiplication operator.

46. The method of claim 37, whereby said category of implicit user pointing gesture measures includes particular types of exact pointer position heuristic measures selected from the group consisting of distance of said pointer from center of said user targeted object and direction of said moving by said user said pointer towards said user targeted object.

47. The method of claim 37, whereby said category of application context measures is based on context, of said selecting said user targeted object by said user, including any information external to said selecting and relevant to understanding said selecting said user targeted object.

48. The method of claim 37, whereby said category of application context measures includes a containment hierarchy particular type of said heuristic measures.

49. A system for implicitly resolving pointing ambiguities in human-computer interaction, comprising:

(a) a user intending to select a user targeted object from a plurality of at least two objects in an object domain;

(b) a pointing mechanism featuring a pointer dynamically moveable throughout said object domain and controllable by said user; and

(c) a computer displaying said plurality of said at least two objects in said object domain and executing a computer application including said pointer dynamically moveable throughout said object domain, whereby said computer implicitly resolves the pointing ambiguities by implicitly analyzing user movements of said pointer towards said user targeted object located in said object domain and predicting said user targeted object, said implicitly analyzing and predicting are performed by using at least one category of heuristic measures selected from the group consisting of implicit user pointing gesture measures, application context measures, and number of computer suggestions of each best predicted user targeted object measures.

50. The method of claim 49, wherein said category of implicit user pointing gesture measures includes particular types of said heuristic measures selected from the group consisting of speed-accuracy tradeoff heuristic measures and exact pointer position heuristic measures.

51. The method of claim 49, wherein said category of implicit user pointing gesture measures includes particular types of said heuristic measures selected from the group consisting of total movement time (TMT) heuristic measures and amount of fine tuning (AFT) or tail length (TL) heuristic measures.

52. The method of claim 49, wherein said category of implicit user pointing gesture measures includes total movement time (TMT) heuristic measures based on applying Fitts' Law for determining a total movement time parameter, TMT, for performing a given task as a function of a size, W, of said user targeted object and a distance, A, of said user targeted object from a pre-determined reference point, where said Fitts' Law is described by a formula, said TMT = $a + b * \log_2 [(2 * A) / W]$, where said a and said b are empirically determined Fitts' Law parameters, said asterisk symbol, *, is a multiplication operator, and said factor $\log_2 [(2 * A) / W]$ is an index of difficulty describing difficulty for said performing said given task in 'bit' units.

53. The method of claim 49, wherein said category of implicit user pointing gesture measures includes total movement time (TMT) heuristic measures based on applying a reversed version of Fitts' Law for predicting a size, W, of said user targeted object from a total movement time parameter, TMT, for performing a given task and from a distance, A, of said

user targeted object from a pre-determined reference point, where said Fitts' Law is described by a formula, said TMT = $a + b * \log_2 [(2 * A) / W]$, where said a and said b are empirically determined Fitts' Law parameters, said asterisk symbol, *, is a multiplication operator, and said factor $\log_2 [(2 * A) / W]$ is an index of difficulty describing difficulty for said performing said given task in 'bit' units.

54. The method of claim 49, wherein said category of implicit user pointing gesture measures includes total movement time (TMT) heuristic measures based on applying a Shannon formulation of Fitts' Law for determining said total movement time, TMT, for performing a given task as a function of a size, W, of said user targeted object and a distance, A, of said user targeted object from a pre-determined reference point, where said Shannon formulation of said Fitts' Law is described by a formula, said TMT = $a + b * \log_2 [(A / W) + 1]$, where said a and said b are empirically determined Fitts' Law parameters, said asterisk symbol, *, is a multiplication operator, and said factor $\log_2 [(A / W)]$ is an index of difficulty describing difficulty for said performing said given task in 'bit' units.

55. The method of claim 49, wherein said category of implicit user pointing gesture measures includes total movement time (TMT) heuristic measures based on applying a reversed Shannon formulation of Fitts' Law for predicting a size, W, of said user targeted object from a total movement time parameter, TMT, for performing a given task and from a distance, A, of said user targeted object from a pre-determined reference point, where said Shannon formulation of said Fitts' Law is described by a formula, said TMT = $a + b * \log_2 [(2 * A) / W]$, where said a and said b are empirically determined Fitts' Law parameters, said

asterisk symbol, *, is a multiplication operator, and said factor $\log_2 [(2 * A) / W]$ is an index of difficulty describing difficulty for said performing said given task in 'bit' units.

56. The method of claim 55, whereby extent by which said prediction of said size, *W*, of said user targeted object fits said reversed Shannon formulation of said Fitts' Law is defined as a fit written in a form, said fit = ABS (TMT - a - b * $\log_2 [(A / W) + 1]$).

57. The method of claim 49, wherein said category of implicit user pointing gesture measures includes amount of fine tuning (AFT) or tail length (TL) heuristic measures for determining a tail length parameter, TL, of said user movement of said pointer as a function of a size, *W*, of said user targeted object and a distance, *A*, of said user targeted object from a pre-determined reference point, where said tail length parameter is described by a formula, said

TL = $a * W^2 + b * W + c$, where said a, said b, and said c, are empirically determined (AFT) or (TL) parameters and said asterisk symbol, *, is a multiplication operator.

58. The method of claim 49, whereby said category of implicit user pointing gesture measures includes particular types of exact pointer position heuristic measures selected from the group consisting of distance of said pointer from center of said user targeted object and direction of said moving by said user said pointer towards said user targeted object.

59. The method of claim 49, whereby said category of application context measures is based on context, of said selecting said user targeted object by said user, including

any information external to said selecting and relevant to understanding said selecting said user targeted object.

60. The method of claim 49, whereby said category of application context measures includes a containment hierarchy particular type of said heuristic measures.

61. A system for implicitly resolving pointing ambiguities in human-computer interaction, comprising:

(a) a user intending to select a user targeted object from a plurality of at least two objects in an object domain;

(b) a pointing mechanism featuring a pointer dynamically moveable throughout said object domain and controllable by said user; and

(c) a computer displaying said plurality of said at least two objects in said object domain and executing a computer application including said pointer dynamically moveable throughout said object domain, whereby said computer implicitly resolves the pointing ambiguities by implicitly analyzing user movements of said pointer towards said user targeted object located in said object domain and predicting said user targeted object, said implicitly analyzing and predicting are performed by using at least one category of heuristic measures selected from the group consisting of implicit user pointing gesture measures and application context measures.

62. The method of claim 61, wherein said category of implicit user pointing gesture measures includes particular types of said heuristic measures selected from the group

consisting of speed-accuracy tradeoff heuristic measures and exact pointer position heuristic measures.

63. The method of claim 61, wherein said category of implicit user pointing gesture measures includes particular types of said heuristic measures selected from the group consisting of total movement time (TMT) heuristic measures and amount of fine tuning (AFT) or tail length (TL) heuristic measures.

64. The method of claim 61, wherein said category of implicit user pointing gesture measures includes total movement time (TMT) heuristic measures based on applying Fitts' Law for determining a total movement time parameter, TMT, for performing a given task as a function of a size, W, of said user targeted object and a distance, A, of said user targeted object from a pre-determined reference point, where said Fitts' Law is described by a formula, said $TMT = a + b * \log_2 [(2 * A) / W]$, where said a and said b are empirically determined Fitts' Law parameters, said asterisk symbol, *, is a multiplication operator, and said factor $\log_2 [(2 * A) / W]$ is an index of difficulty describing difficulty for said performing said given task in 'bit' units.

65. The method of claim 61, wherein said category of implicit user pointing gesture measures includes total movement time (TMT) heuristic measures based on applying a reversed version of Fitts' Law for predicting a size, W, of said user targeted object from a total movement time parameter, TMT, for performing a given task and from a distance, A, of said

user targeted object from a pre-determined reference point, where said Fitts' Law is described by a formula, said TMT = $a + b * \log_2 [(2 * A) / W]$, where said a and said b are empirically determined Fitts' Law parameters, said asterisk symbol, *, is a multiplication operator, and said factor $\log_2 [(2 * A) / W]$ is an index of difficulty describing difficulty for said performing said given task in 'bit' units.

66. The method of claim 61, wherein said category of implicit user pointing gesture measures includes total movement time (TMT) heuristic measures based on applying a Shannon formulation of Fitts' Law for determining said total movement time, TMT, for performing a given task as a function of a size, W, of said user targeted object and a distance, A, of said user targeted object from a pre-determined reference point, where said Shannon formulation of said Fitts' Law is described by a formula, said TMT = $a + b * \log_2 [(A / W) + 1]$, where said a and said b are empirically determined Fitts' Law parameters, said asterisk symbol, *, is a multiplication operator, and said factor $\log_2 [(A / W)]$ is an index of difficulty describing difficulty for said performing said given task in 'bit' units.

67. The method of claim 61, wherein said category of implicit user pointing gesture measures includes total movement time (TMT) heuristic measures based on applying a reversed Shannon formulation of Fitts' Law for predicting a size, W, of said user targeted object from a total movement time parameter, TMT, for performing a given task and from a distance, A, of said user targeted object from a pre-determined reference point, where said Shannon formulation of said Fitts' Law is described by a formula, said TMT = $a + b * \log_2 [(2 * A) / W]$, where said a and said b are empirically determined Fitts' Law parameters, said

asterisk symbol, *, is a multiplication operator, and said factor $\log_2 [(2 * A) / W]$ is an index of difficulty describing difficulty for said performing said given task in 'bit' units.

68. The method of claim 67, whereby extent by which said prediction of said size, W, of said user targeted object fits said reversed Shannon formulation of said Fitts' Law is defined as a fit written in a form, said fit = ABS (TMT - a - b * $\log_2 [(A / W) + 1]$).

69. The method of claim 61, wherein said category of implicit user pointing gesture measures includes amount of fine tuning (AFT) or tail length (TL) heuristic measures for determining a tail length parameter, TL, of said user movement of said pointer as a function of a size, W, of said user targeted object and a distance, A, of said user targeted object from a pre-determined reference point, where said tail length parameter is described by a formula, said

TL = $a * W^2 + b * W + c$, where said a, said b, and said c, are empirically determined (AFT) or (TL) parameters and said asterisk symbol, *, is a multiplication operator.

70. The method of claim 61, whereby said category of implicit user pointing gesture measures includes particular types of exact pointer position heuristic measures selected from the group consisting of distance of said pointer from center of said user targeted object and direction of said moving by said user said pointer towards said user targeted object.

71. The method of claim 61, whereby said category of application context measures is based on context, of said selecting said user targeted object by said user, including

any information external to said selecting and relevant to understanding said selecting said user targeted object.

72. The method of claim 61, whereby said category of application context measures includes a containment hierarchy particular type of said heuristic measures.